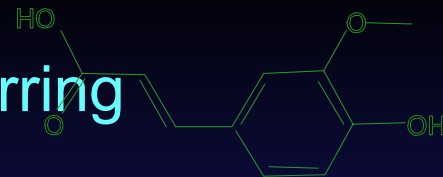


Alternative Active Agents: Naturally Occurring

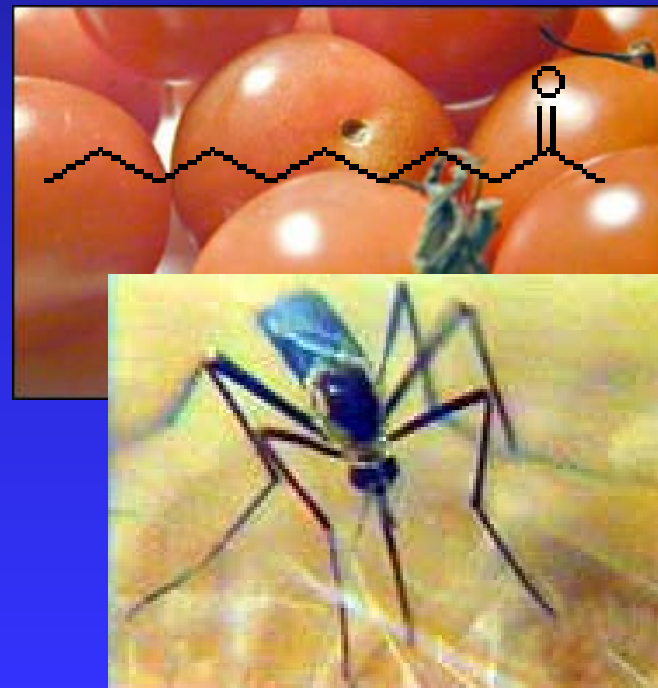


Sunscreen Agent: **SoyScreen™** — made from ferulic acid (a cinnamonyl family compound) and soybean oil: feruloylated acylglycerols. Broad UV absorption characteristics over the A, B, & C bands. Possible replacement for all four current sunscreen agents such as octylmethoxy cinnamate, padimate-O, oxybenzone, and dioxybenzone. Research of J. Laszlo and D. Compton, USDA-ARS New Crops and Processing Technology Research Unit.

[see: Suszkiw, J. 2002. "How about some soybeans with that tan?" *Agricultural Research Mag.* 50(12):13; available at: <http://www.ars.usda.gov/is/AR/archive/dec02/tan1202.pdf>, or <http://www.ars.usda.gov/is/AR/archive/dec02/tan1202.htm>; also see: <http://www.ncaur.usda.gov/nc/079soyscreen.html>]

Insect Repellent: Extremely effective repellent for mosquitoes and other insects isolated from tomatoes by Michael Roe (NC State University). **2-Undecanone** (IBI-246) licensed to *Insect Biotechnology, Inc.*

First patent: *SkeeterShield*. Alternative to DEET (N,N-diethyl-*m*-toluamide). [see: http://www2.ncsu.edu/ncsu/univ_relations/news_services/press_releases/02_06/164.htm]



Antibiotics: Some Alternatives

Probiotics & Bacteriophages

(for excluding or killing pathogens)



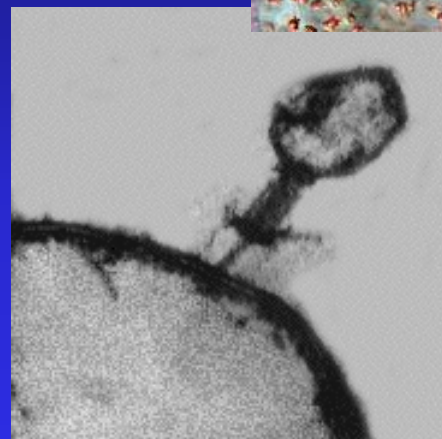
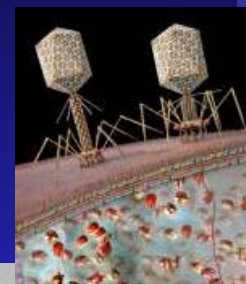
Probiotics (via pills and food) maintain intestinal flora. New applications include burn treatment.



“Competitive exclusion” products for domestic animals.



Holistic improvement in animal husbandry and hygiene (especially for CAFOs).



Live “Phage Therapy”: pioneered by Soviets in 1920s.

